TouchKit
TouchScreen Controller
User Manual

for Windows 9X / ME

Version: 3.4.0

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Chapter 1. Touch Panel Controller

This touch panel controller provides the optimal performance of analog resistive touch panels for 5 wire models. It communicates with PC system directly through RS232, PS/2 or USB connector. Users can see how superior the design is in sensitivity, accuracy and friendly operation. The touch panel driver emulates mouse left and right button function and supports operation systems including Microsoft Windows 95 / 98 / ME /NT4 / 2000 / XP / XP Tablet PC Edition, Windows CE 2.12 / 3.0 / .NET, Linux, iMac and DOS.

1.1 Controller

Interface	RS232	USB	PS/2
5-wire	Ready	Ready	Ready

Table 1. Controllers match with different interfaces

1.2 Specifications and Features

Specifications	
Power requirements	+5VDC (Maximum 100mA, typical 70mA, 50mV peak to peak maximum ripple)
Operating temperature	0 to 50
Storage Temperature	-40 to 80
Relative Humidity	95% at 60
Protocol	RS232 Model: 9600 bauds, None parity, 8 data bits and 1 stop bit USB Model: USB 1.1 Low speed PS/2 Model: PS/2 mouse
Resolution	2048 X 2048
Report rate	RS232 Model: Max. 160 points/sec USB Model: Max. 160 points/sec PS/2 Model: Max. 140 points/sec
Response time	Resistive: Max. 35 ms Capacitive: Max. 20 ms
Pin out definition	5 wire model: UL, UR, COM, LR, LL
Panel resistance	5 wire resistive model: 50 ~ 200 ohm (pin to pin on drive layer)
Regulatory Approvals	FCC-B, CE

Table 2. Specifications for **TouchKit** controller

Features	
Calibration	Fast full 4 points position
Compensation	Accurate 25 points linearity compensation.
Draw Test	Position and linearity verification
Language	Support 10 languages for Windows
Advanced Feature	1. Support monitor / display rotation 2. Support multiple monitor / display 3. Support QVGA and Half-VGA function 4. Support edge compensation 5. Support constant touch
Controller Setting	1. Support multiple controllers 2. Dynamical add / remove controllers 3. Change Controller interface without rebooting.
Mouse Emulator	1. Right / Left button emulation 2. Normal / Click on touch / Click on release mode 3. Auto right button
Sound Notification	1. Sound option (No Sound / Touch Down / Lift Up) 2. Frequency adjustment 3. Duration adjustment
Double Click	1. Configurable double click speed 2. Configurable double click area
OS support	1. Windows 95 / 98 / ME / NT4 / 2000 / XP / Windows XP Tablet PC Edition 2. Windows CE 2.12 / 3.0 / .NET 3. Linux (RedHat / Fedora / Mandrake / Suse / YellowDog) 4. iMac. OS9.X / OSX 5. MS-DOS: Support display resolution: 320x200, 640x200, 640x350, 640x480, 800x600, 1024x768 and 1280x1024
COM port support	1. Support COM 1 ~ COM 256 for Windows and Linux 2. Support COM 1 ~ COM 8 for DOS

Table 3. Features for **TouchKit** software

Chapter 2. Installing TouchKit

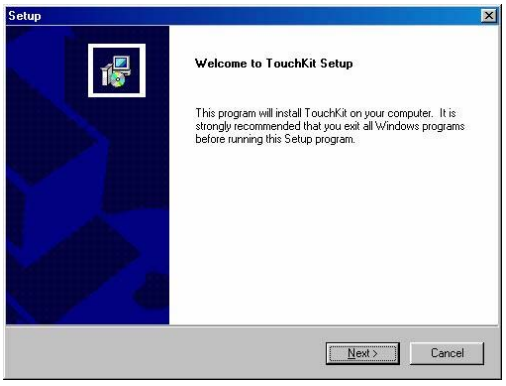
TouchKit is software, which contains drivers for the touch panel controllers. For the specified communication connectors, RS232, PS/2 and USB, and the other two utilities:

- **Touch Tray support**
  This utility is for emulating the right and left button of mouse through the touch panel. Users can toggle between right or left mouse buttons by this utility.

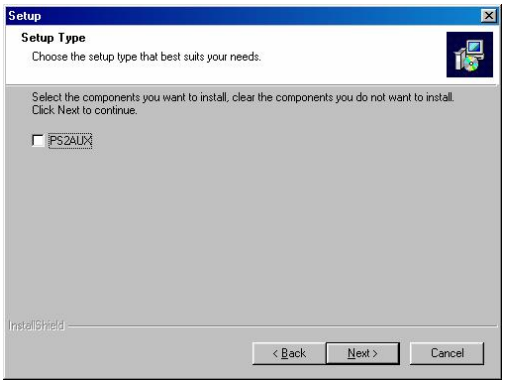
- **Configuration support**
  The calibration and draw test of touch panel are done through this utility. Users can add or remove new RS-232, PS/2 or USB touch panel devices.

Follow these steps to install **TouchKit.**

1. Put the **TouchKit** CD to CD-ROM.
2. Change directory to **Win9X_ME**
3. Double click **Setup.exe**, the windows installation program will then start to run. Notice DO NOT plug in the USB controller before the installation has been finished.
4. Click **[Next >]** button to continue installation.

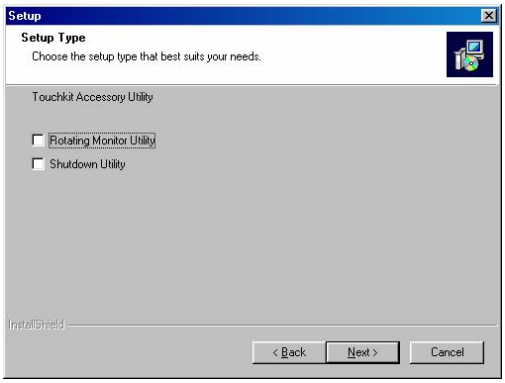

Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

5. Then check the check box if PS/2 touch controller is to be installed. The default is unchecked. Then Press **[Next >]** to continue installation.

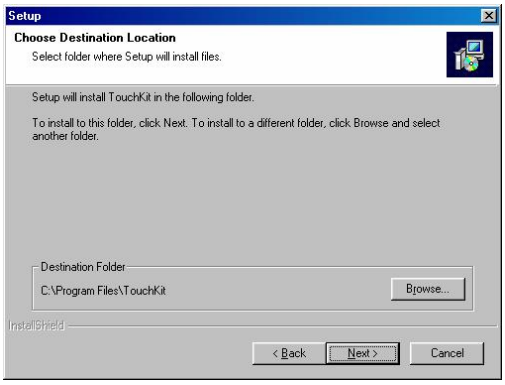

Setup
Setup Type
Choose the setup type that best suits your needs.
Select the components you want to install, clear the components you do not want to install. Click Next to continue.
PS2AUX
InstallShield
< Back
Next >
Cancel

System will give you a warning, if user checks the PS2AUX check box,

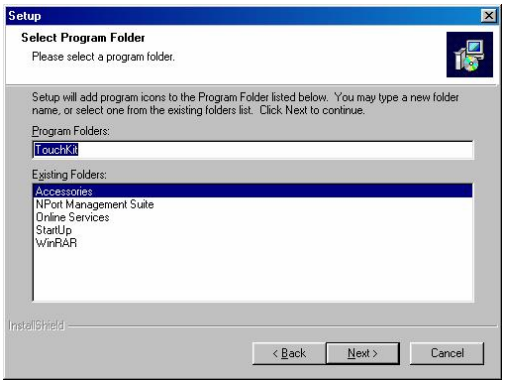
6. Choose the setup type that best suits your needs. There are two **TouchKit** accessory utilities to choose from, **Rotation Monitor Utility** and **Shutdown Utility**. Users can install the utility they want by checking the box. Press **[Next >]** to continue installation.



7. Select the appropriate folder where set-up files will be installed. Then Press **[Next >]** to continue installation.


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

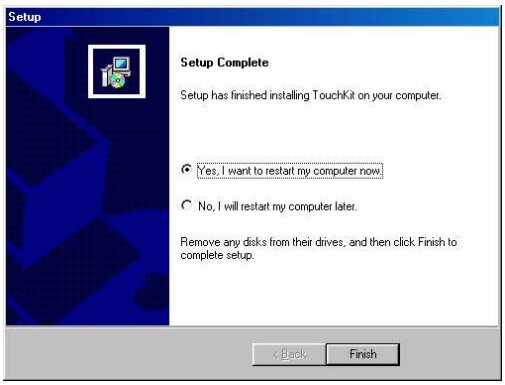
8. Then type in the name of program folder for **TouchKit** or press **[Next >]** to continue. There will be a default name for it.



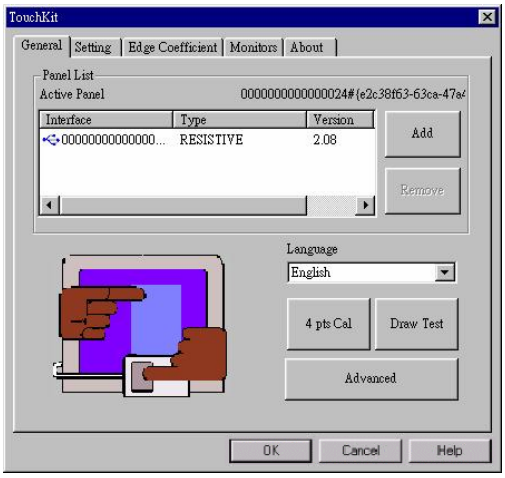
During driver installation, the setup program will scan COM port for RS232 **Touchkit** controller. Once the controller was scanned, the setup program will display the following dialog

Click Yes to add the controller on the specified COM port automatically.

9. Windows will copying files once that is done it will request to re-boot computer. Press **[Yes >]** to re-boot immediately or **[No >]** to re-boot later. The installation will not be finished until system re-boot.

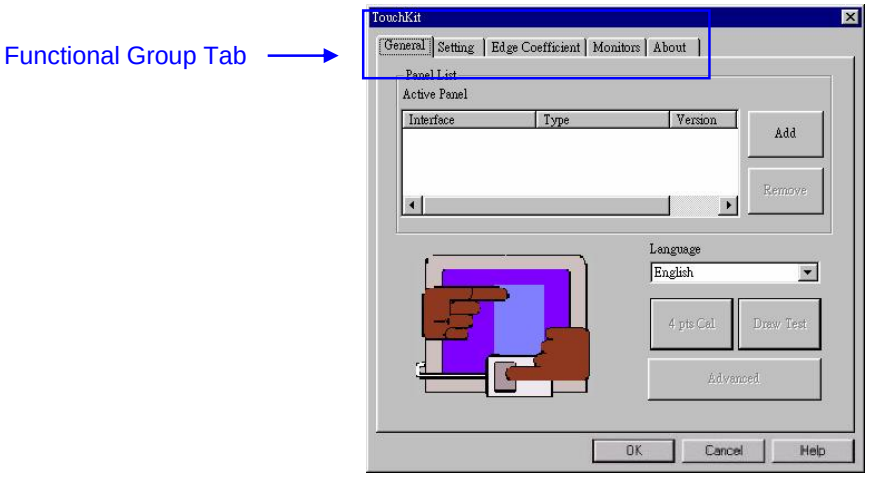

Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish

10. Setup is complete. After **TouchKit** installation, the USB device will be found automatically as soon as it is plugged into the computer. Then users can see the new device on the application program window. And, the program will remove the USB Device automatically as soon as it is unplugged. **(USB device is not supported for Windows95)**



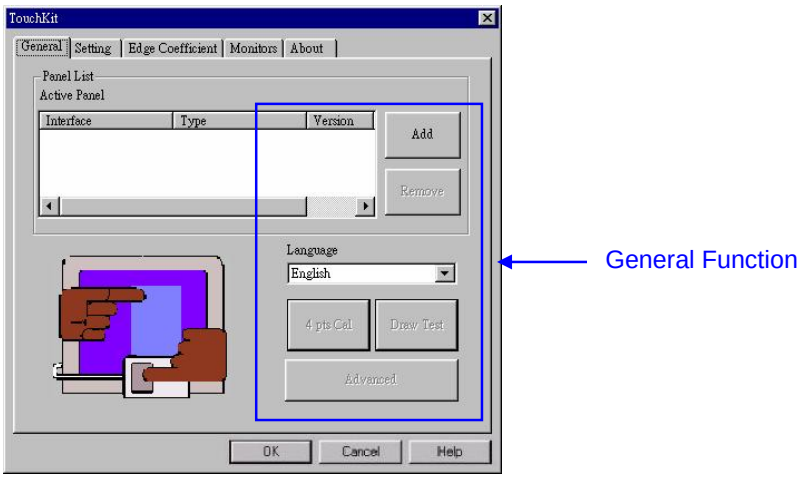
Chapter 3. Configuration Utility and Right Button Emulator

There are five property pages in **TouchKit** utility, they are **General**, **Setting**, **Edge coefficient**, **Monitors** and **About**. Each property page contains different functions for users to make adjustments. Therefore, users can easily manage all the **TouchKit** controllers through the **TouchKit** utility.



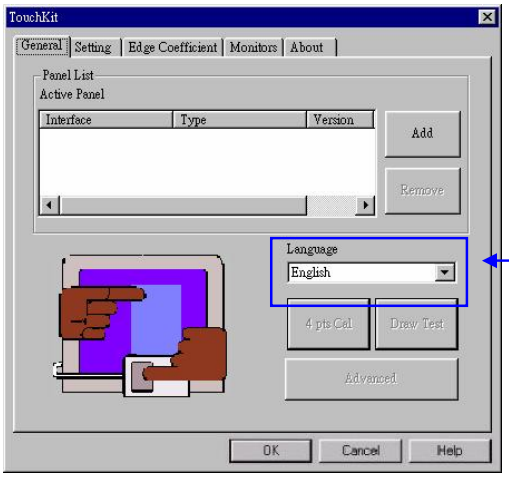
General

General property page contains the functions of **language selection**, **devices add/ remove**, **4 points calibration**, **Draw test** and **Advanced**.



<Language>

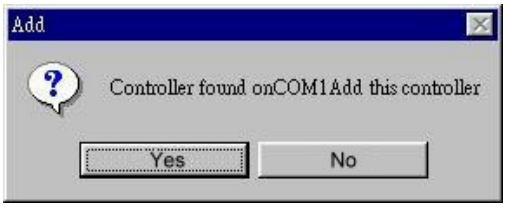
TouchKit supports multi-language user interface. Users could select native language that is compatible to operation system support. For example, if the operation system is a traditional Chinese version, users could see the normal display words under the traditional Chinese and English mode. There are ten different languages, **English**, **Traditional Chinese**, **Simplified Chinese**, **French**, **Spanish**, **German**, **Japanese, Italian, Korean** and **Dutch** supported in this feature of **TouchKit**.



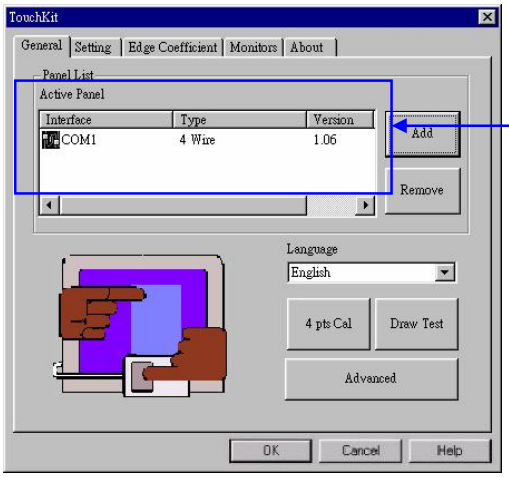
Select the compatible language first or users may not see the normal display of each button.

<Add> / <Remove>

Please check the touch panel devices (including its controller) are equipped well, then click **[Add]** button to add all of those RS-232 and PS/2 devices to the **Panel List** dialogue box.



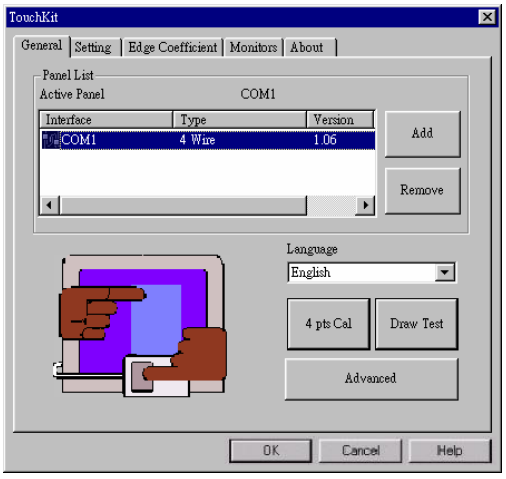
There is one devices found. Press **[Yes]** to continue.



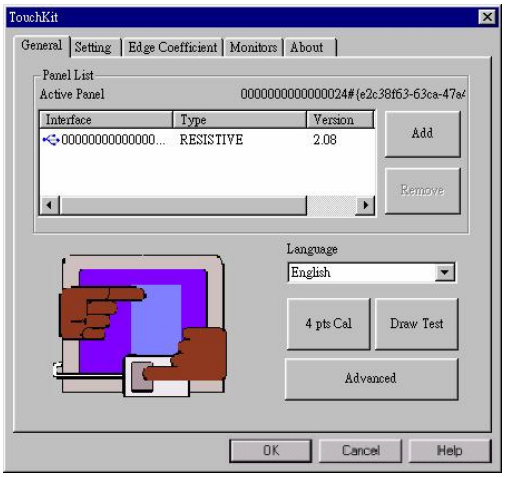
The controller is displayed on the Panel List box. Users can get interface type, firmware version and baud rate for each controller.

If more than one device is added select the proper device from the panel list window.

The one selected will activate the panel, and remember to do the calibration before starting to use touch panel.



The USB touch controller will be added automatically as soon as it is plugged into the computer. Then users can see the new device on the application program window. And, the program will remove the USB touch controller automatically as soon as it is unplugged. **(USB device is not supported for Windows95)**



There are three buttons, **[4pts Cal] [Draw Test] [Advanced]**, at the lower section of the **General** property page.

<4pts Cal>

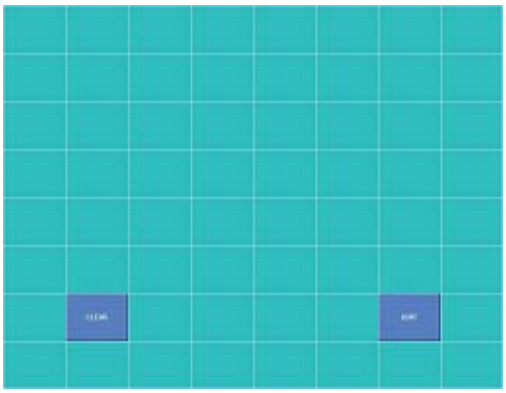
Correct 4 point locations on screen with the panel. Press **[4 pts Cal]**, screen displays as follows.

Touch the blinking symbol on panel until it beeps or it stops blinking.

<Draw Test>

Test the drawing position related to the display screen on panel.

Click on the **[Draw Test]** button. There will be a blue square display showing.

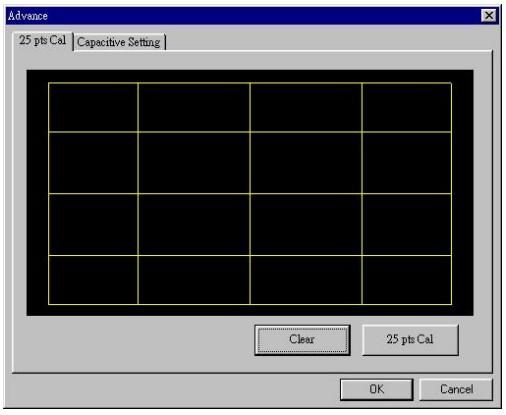


In drawing test window, users can click **[Clear]** button to clear the window. Also, users can click **[Quit]** or press mouse right button to quit from the drawing test.

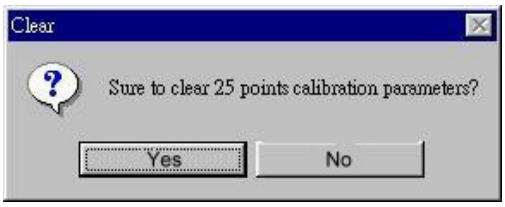
In drawing test window, users can verify the panel linearity, calibration capability, and drawing line quality.

<Advanced>

Touchkit provides a more accurate 25 points calibration. In addition, **Touchkit** provides controller setting for capacitive touch sensor. If the capacitive controller is selected, a capacitive setting property page appears on the advanced sheet. In general a 25 point calibration is not needed.



Press **[Clear]** to clear the previous calibration records.

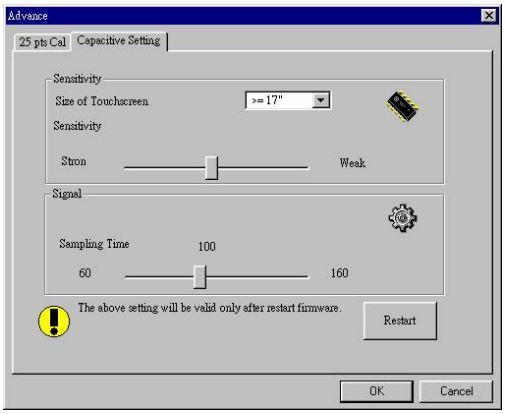


Press **[Yes]** to clear previous records. The new record will become default record.

Press **[25ptCal]** to do 25 points calibration. Calibrate the 25 point locations on screen using the touch panel.

Touch the blinking symbol on panel until it beeps or stops blinking.
After the calibration, the new record will overwrite the old one.

If the selected controller is capacitive type, there will be an extra property page for capacitive settings adjustment shown as below:



Please select property size of capacitive screen first, and press **[Restart]**

The capacitive controller will restart, DO NOT touch the screen before the warning message disappears

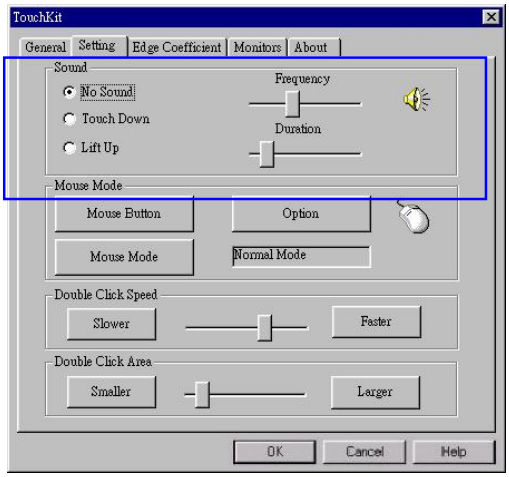
Warning: Do not adjust the sensitive and sampling time without RD help

Setting

There are three functional groups in the **Settings** property page, the upper section of the property page is the **sound option**; the middle section is **Mouse Mode;** and the lower section is **Double Click Adjustment**.

The **Sound** options provide users the click feedback while touching the panel.
Select preferred option first.

Sound options →



<No Sound>

Users could choose to make no sound while using the touch panel.

<Touch Down>

The system will make a sound while touching the panel.

<Lift Up>

The system will not make any sound until finger leaves the touch panel.

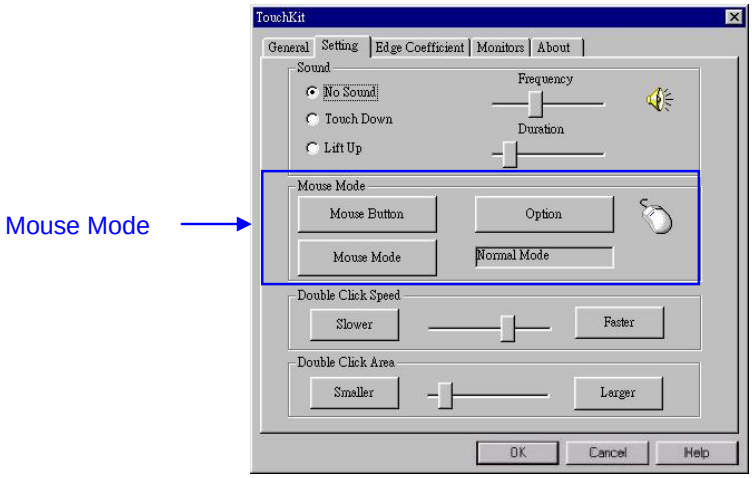
<Frequency>

Sound frequency, drag the cursor from left(low) to right(high).

<Duration>

Sound duration, drag the cursor from left(short) to right(long).

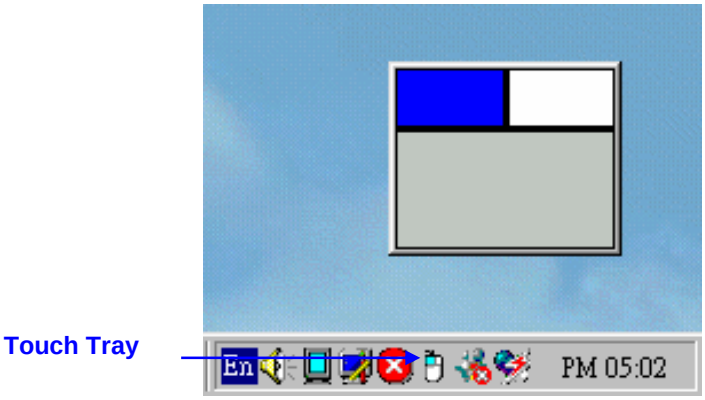
The **Mouse Mode** provides users different operating options. They are as follows:



<Mouse Button>

Click it to **show / hide Touch Tray** on the right bottom corner of the desktop. The touch panel system starts with the computer booting, and a mouse icon shows in the taskbar.

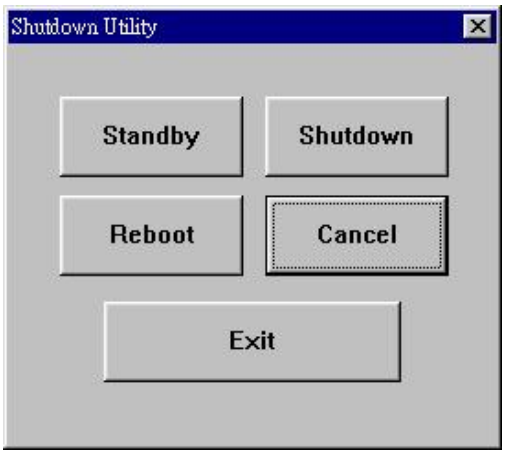
Users can choose show or hide **Touch Tray** from the mouse icon in the taskbar. Just click the mouse icon to choose show or hide.



Change **right / left** button by clicking the upper small rectangular box of **Touch Tray**. Blue area expresses what button has been selected.

<Shutdown utility>

Click on shutdown utility in the task bar



Shutdown utility dialog

There are five modes in shutdown utility for users convenience.
[Standby] to enter standby mode that saves power consumption.
[Shutdown] to turn off PC.
[Reboot] to restart PC.
[Cancel] to escape from the Shutdown utility dialog.
[Exit] to disable the Shutdown utility.

Please notice that Windows NT does not support this function.

<Mouse Mode>

There are three kinds of mouse modes,

[Normal Mode]

It provides all the mouse functions, including the dragging function.

[Click on Touch]

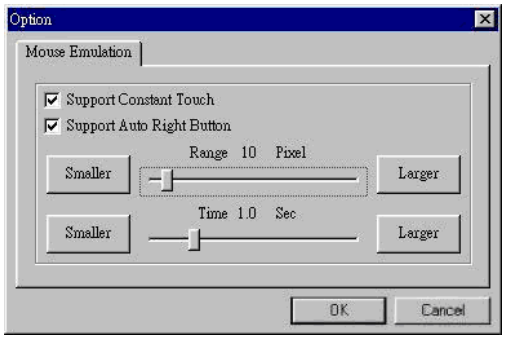
Click action is executed as soon as users touch the panel.

[Click on Release]

Click action will not be executed until finger leaves the panel.

<Option>

Touchkit provides an option for advanced Mouse Emulation settings. When the **Option** button is pressed, a setting property sheet will pop up. **Support Constant Touch** and **Support Auto Right Button** check boxes are shown in the property sheet to **enable** / **disable Constant touch** and **Auto right button** support.



[Constant Touch]

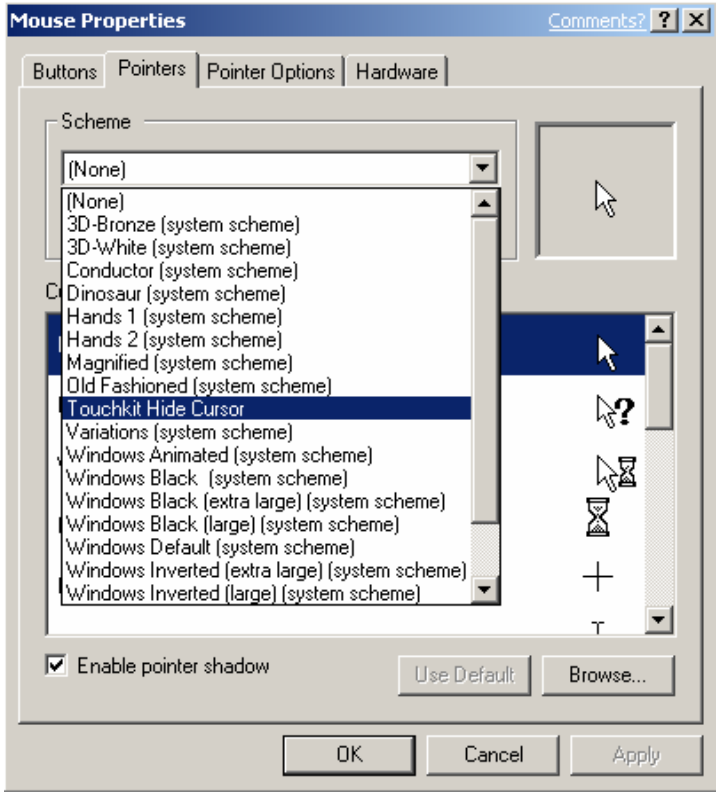
Enable **Constant Touch** to force driver to stop reporting touch point when the movement is within the range which users can adjust. Therefore, the user can see a stabilized cursor instead of a chattering cursor when users touch the same point with unwanted noise.

[Auto Right Button]

Enable **Auto Right Button** to force driver to report a **right click mouse event** to OS when users touches the panel to an extended time. User no longer needs to touch the **right button** in the **Touchtray** to activate a **right click**. This feature makes it easy to do **right click** with the touchscreen.

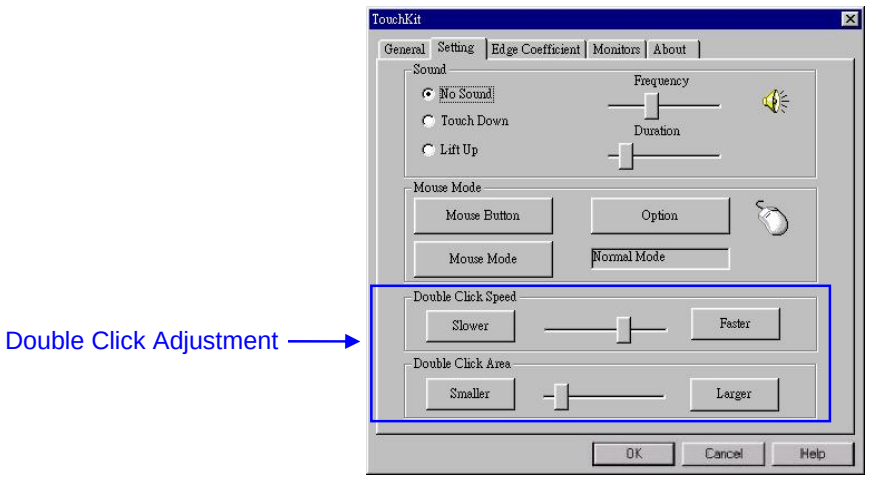
<Cursor Visibility>

Cursor visibility function allows users to hide the cursor on the display. Please go to **Start / Control Panel / Mouse / Pointers / Scheme**, and choose **TouchKit Hide Cursor**. Press **[Apply]** to make setting change, press **[OK]** to escape the property page.



If users want to cancel the function of TouchKit Hide Cursor, do the steps again and choose the other scheme.

Double Click adjustment provides users the ability to set up the tolerance while double clicking.



<Double Click Speed>

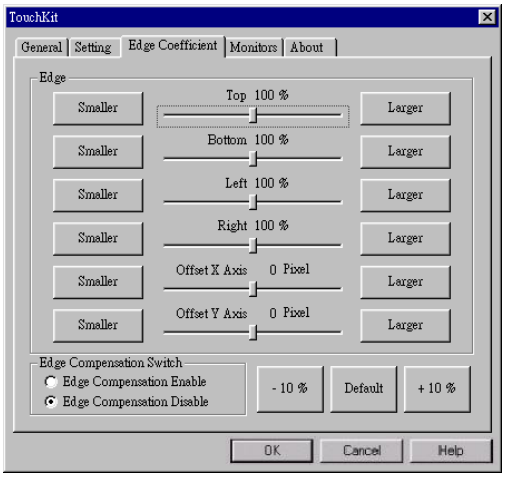
Double Click Speed is the double click response time for Windows system. Users can adjust the proper speed for easy double clicking using the touch panel.

<Double Click Area>

Each touch area has its own touch tolerance. If the Double Click Area is set to **<Smaller>**, the panel will be very sensitive to small movements. If users set it to **<Larger>**, it tolerates larger point movement while staying on a fixed point.

Edge Coefficient

Edge Coefficient property page contains the functions of **Edge Compensation for Top, Bottom, Left, Right, X Axis and Y Axis**.



In some case, if it is difficult to touch items at the edges of the touch panel, users can set adjustment to reach the edges of the screen image.

<Top>

Set the Edge to **<Smaller>**, **TouchKit** will reduce the horizontal position of the top edge. Set the Edge to **<Larger>**, **TouchKit** will extend the horizontal position of the top edge.

<Bottom>

Set the Edge to **<Smaller>**, **TouchKit** will reduce the horizontal position of the bottom edge. Set the Edge to **<Larger>**, **TouchKit** will extend the horizontal position of the bottom edge.

<Left>

Set the Edge to **<Smaller>**, **TouchKit** will reduce the vertical position of the left edge. Set the Edge to **<Larger>**, **TouchKit** will extend the vertical position of the left edge.

<Right>

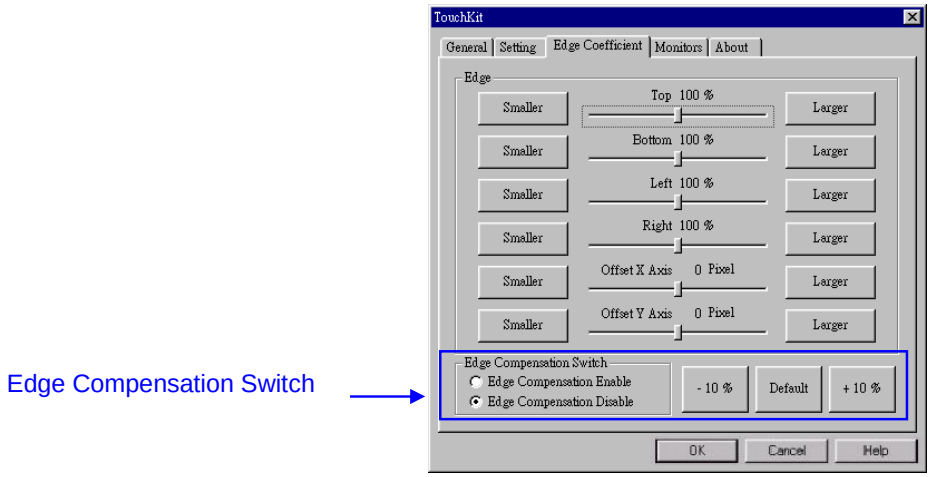
Set the Edge to **<Smaller>**, **TouchKit** will reduce the vertical position of the right edge. Set the Edge to **<Larger>**, **TouchKit** will extend the vertical position of the right edge.

<Offset X Axis>

Set the Offset X Axis to **<Smaller>**, cursor will be moved a pixel of X Axis to left. Set the Offset X Axis to **<Larger>**, cursor will be moved a pixel of X Axis to right.

<Offset Y Axis>

Set the Offset Y Axis to **<Smaller>**, cursor will be moved a pixel of Y Axis to top. Set the Offset Y Axis to **<Larger>**, cursor will be moved a pixel of Y Axis to bottom.



<Edge Compensation Switch>

Users can choose Edge compensation **Enable / Disable** from left bottom corner of **Touchkit** Utility.

Using **+10% and -10% buttons** to adjust the edge. If users press **+10% button**, the top, bottom, left and right edges will extend 10% of orientation to touch screen, and the cursor will be moved 10 pixel of X and Y Axis to right and top. If users press **-10% button**, the top, bottom, left and right edges will contract 10% of

orientation to touch screen, and the cursor will be moved 10 pixel of X and Y Axis to left and bottom.

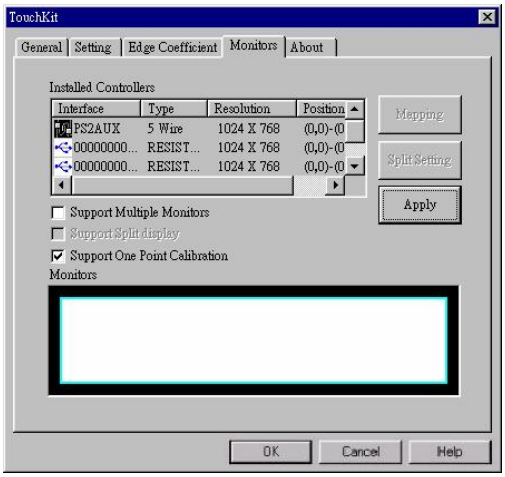
If users want the value back to the default value, choose Default button.

Monitors

There are three functions in this property page, and they are **Multiple Monitors**, **Split Monitor** and **One point Calibration**.

<Multiple Monitors>

To configure the mapping relationship between the monitors and the touch panels, select the monitor page as below.

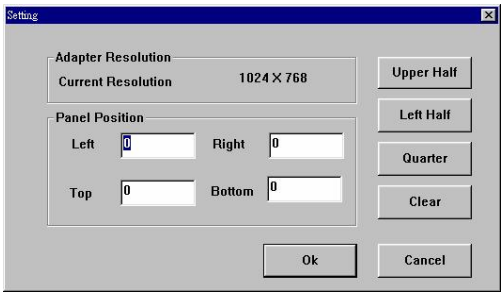


Set the check box (Use Multiple Monitors) to enable multiple monitor mapping. Uncheck this box will disable multiple-monitor configuration, all of the touch panel controllers will be mapped to the primary monitor. The gray shadow area is the selected monitor controller/panel. The button **[Mapping]** is used to find the mapping relationships between the monitors and touch panel controllers. Press the **[Mapping]**, the software will guide users to touch the corresponding monitor to obtain the mapping relationship.

After finish monitor mapping, Press **[Apply]** to apply the mapping relation.

<Split Monitors>

To use the Split Monitor function, users need to select which controller you want to launch this function, then check the Multiple Monitors box and Split Monitor at the same time. Press the **[Split Setting]** button to set up the activate area.



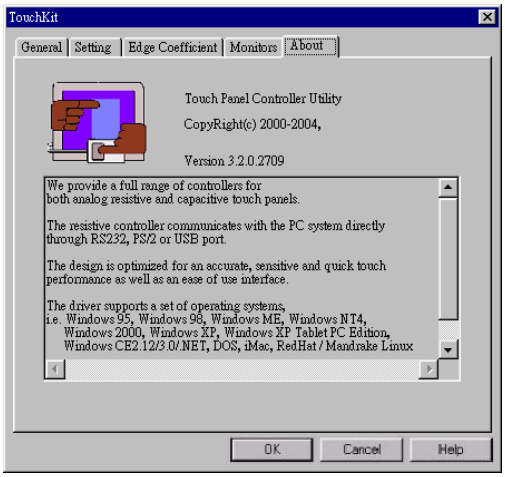
It shows the current resolution of display and users can set up the active area by inputting the value by yourself or use the default button **[Upper Half]**, **[Left Half]** or **[Quarter]**. The default value of panel resolution should be full screen as Left: **0** , Right: **0**, Top: **0** and Bottom: **0**.

<One Point Calibration>

TouchKit utility provides a fast tool to identify the touchscreen orientation when the monitor display is rotated by 90 degrees. Enable this **One Point Calibration** feature, **Touchtray** will pop up **One Point Calibration** tool for users to identify and correct the touchscreen / monitor orientation whenever the monitor is rotated by 90 degrees. Disabling this feature, has **Touchtray** not pop up **One Point Calibration** tool. Then, the user has to do four points calibration to correct the orientation whenever the monitor is rotated.

About

Information about **TouchKit**.


TouchKit
General
Setting
Edge Coefficient
Monitors
About
Touch Panel Controller Utility
CopyRight(c) 2000-2004,
Version 3.2.0.2709
We provide a full range of controllers for both analog resistive and capacitive touch panels.
The resistive controller communicates with the PC system directly through RS232, PS/2 or USB port.
The design is optimized for an accurate, sensitive and quick touch performance as well as an ease of use interface.
The driver supports a set of operating systems, i.e. Windows 95, Windows 98, Windows ME, Windows NT4, Windows 2000, Windows XP, Windows XP Tablet PC Edition, Windows CE2.12/3.0/.NET, DOS, iMac, RedHat / Mandrake Linux
OK
Cancel
Help

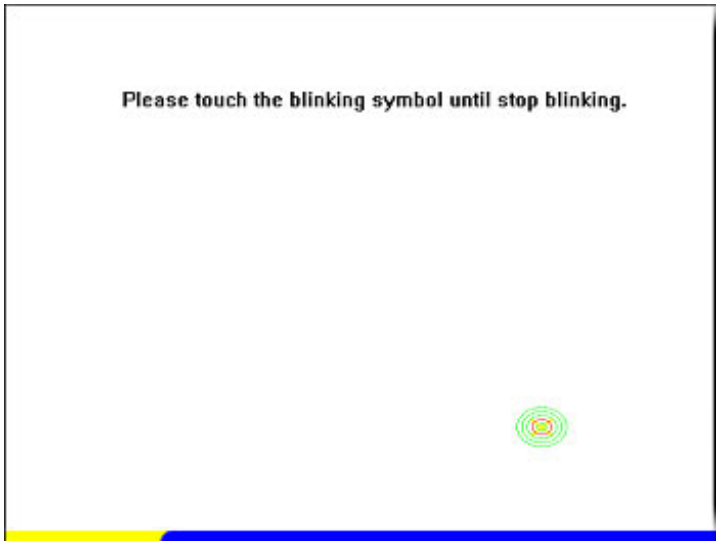
Chapter 4. MONITOR ROTATION SETTING

TouchKit driver package for Windows 98/ME/2000/XP provides two easy ways to rotate the touch panel while the display is rotated.

- Rotating display by way of nVidia or ATI driver
- Rotating display by way of Pivot.

4.1 Rotating display by way of nVidia or ATI driver

1. After activating the rotation of nVidia or ATI driver, there will be one blinking symbol like the following picture. Touch near the blinking symbol until it stops blinking, and the touch panel will rotate itself.



One touch blinking symbol adjustment

2. However, 180 degree rotation of touch panel can not be done in one step, users need to rotate 90 degrees twice.

4.2 Rotating display by way of Pivot

There are two ways to rotate the display by way of Pivot.

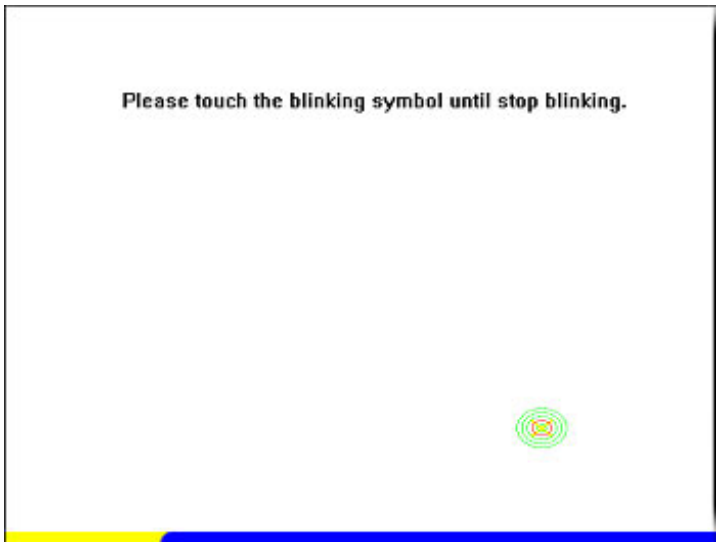
- Rotating display by way of Pivot hotkey or function menu
- Rotating display by way of RotTray icon provided by **TouchKit**.

< Rotating display by way of Pivot hotkey or function menu >

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

2. There will be a pivot icon in the task bar. Users can click on it, and users can choose four angles: 0 degree, 90 degree, 180 degree, 270 degree to rotate the display.

3. After choosing the angle users want to rotate, there will be one blinking symbol showing as the following picture. Touch this blinking symbol until it stops blinking, and the touch panel will rotate itself.



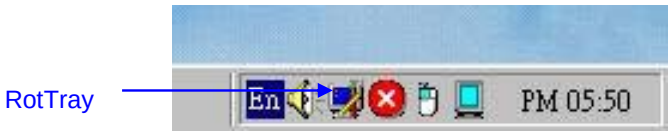
One touch blinking symbol adjustment

4. However 180 degree rotation of touch panel can not be done in one step, users need to rotate 90 degree twice.

< Rotating display by way of RotTray icon provided by TouchKit>

1. To rotate the display, please install Pivot pro 6.05 first. Then reboot PC to activate Pivot.

2. Users will see **RotTray** icon in the task bar.

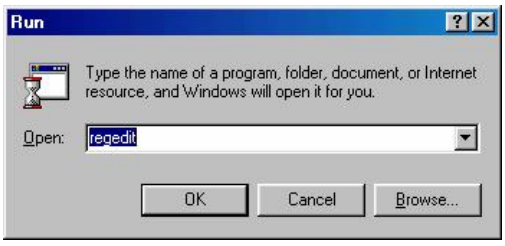


RotTray icon

3. Clicking on **RotTray**, it will call Pivot to rotate the display and touch panel 90 degree at the same time. Clicking it again, it will rotate another 90 degree to 180 degree. Every click on **RotTray**, display will rotate clockwise. Recalibration and one symbol adjustment won't be necessary anymore.

4. However this version of **RotTray** is design for Pivot pro 6.05. If users want to use older version of Pivot, like Pivot 5.1, users need to amend the value of windows registry. The next step is an example for setting Pivot 5.1 on Win98.

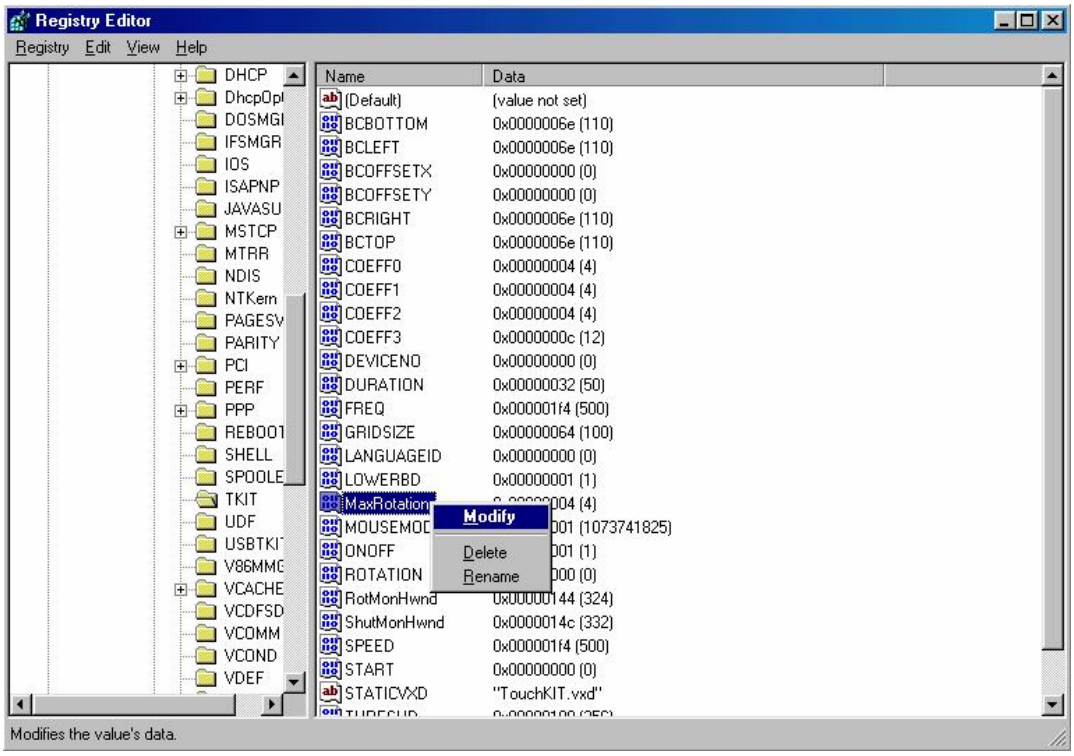
5. Go to **Start / Run**, and execute regedit.



Press **[OK]** to execute

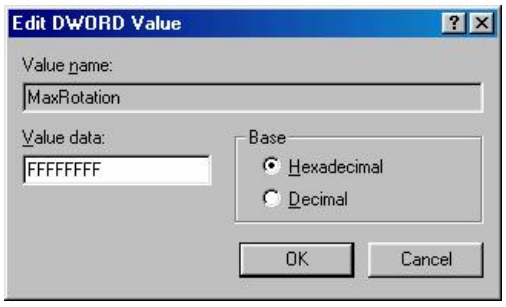
6. **For Windows 95/98/ME** OS, The Registry Editor will show as the follow picture. Then go to HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\VxD\TKIT.

   Right click on the **MaxRotation**, and choose Modify.



Right click on MaxRotation to Modify Value data

7. Choosing the Hexadecimal Base, and replace the value data “4”(default) with “FFFFFFFF”.



Pressing **[OK]** to confirm.

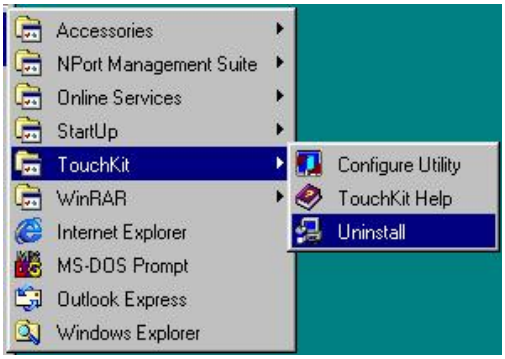
8. Here bellow are the value data for different version of Pivot:

Version of Pivot	Available Angle	Value Data
Pivot pro 6.05	0, 90, 180, 270	4 (default)
Pivot 5.1	0, -90	FFFFFFFF
Other Version	0, 90	2

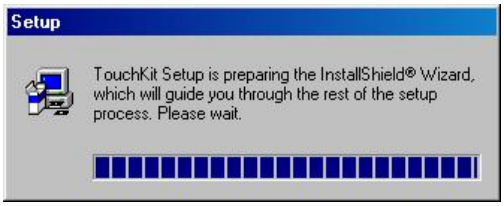
Chapter 5. Uninstalling TouchKit

Follow these steps to uninstall **TouchKit.**

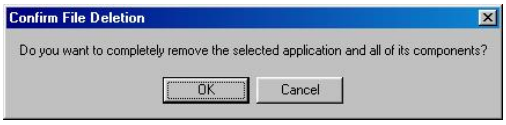
1. Go to **Start / Programs / TouchKit / Uninstall**, and execute it.



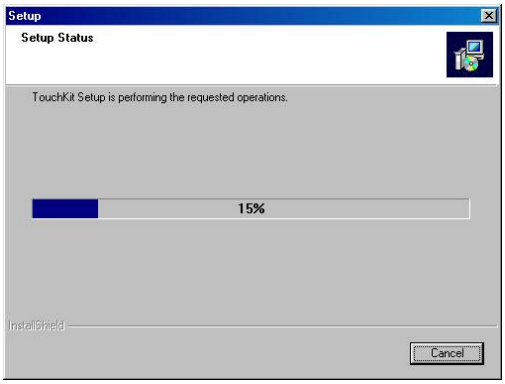
2. **TouchKit** setup dialog appears, and prepares to uninstall.


Setup
TouchKit Setup is preparing the InstallShield® Wizard, which will guide you through the rest of the setup process. Please wait.

3. Confirm dialog, press **[OK]** to start un-installation; **[Cancel]** to cancel un-installation.

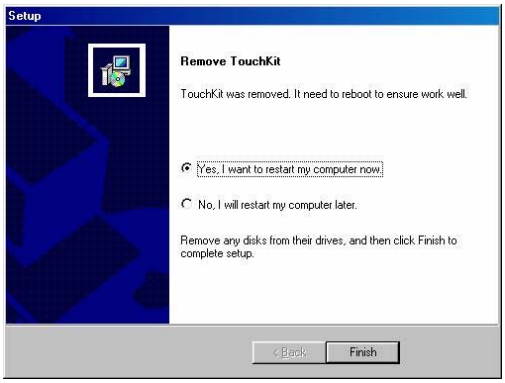


4. Start to uninstall **TouchKit**.



If users do not want to uninstall **TouchKit** at this moment, press **[Cancel]** to terminate the uninstall process.

5. **TouchKit** will not be removed until system re-boots. Press **[Yes]** to re-boot immediately or **[No]** to re-boot later.


Setup
Remove TouchKit
TouchKit was removed. It need to reboot to ensure work well.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
< Back
Finish